

**We Claim:**

1. A deoxyribonucleic acid (DNA) vaccine against influenza virus infection comprising a plasmid carrying a gene encoding hemagglutinin (HA) protein, said DNA vaccine being encapsulated in liposomes.
2. A vaccine as claimed in claim 1 directed to the induction of mucosal immunity for treating respiratory influenza virus infection.
3. A vaccine as claimed in claim 2 targeting the mucosal surfaces in the respiratory tract of a host.
4. A transfer vector comprising a pCI-HA10 plasmid adapted for transformation of a microorganism host.
5. A process of cloning a pCI-HA10 plasmid comprising:
  - (1) re-amplifying hemagglutinin (HA) gene with primers;
  - (2) ligating HA gene into a pCI vector;
  - (3) transforming said vector into competent *E. Coli* cells; and
  - (4) transcribing and translating pCI-HA10 clones.
6. Use of a liposome-encapsulated DNA vaccine encoding the hemagglutinin (HA) gene to treat respiratory influenza virus infection.

7. Use of a liposome-encapsulated DNA vaccine as claimed in claim 6, wherein said vaccine is administered intranasally.

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